Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Previously Presented) A method of fabricating a radiation-emitting semiconductor chip based on AlGaInP, comprising the method steps of:

preparing a substrate;

applying to said substrate a semiconductor layer sequence comprising a photon-emitting active layer; and

applying a transparent decoupling layer, wherein

said substrate is formed substantially of germanium and

said transparent decoupling layer is applied in a temperature range extending no higher than 800°C.

2. (Previously Presented) The method as described in claim 1, wherein said transparent decoupling layer is applied with the use of tertiary butyl phosphine as a phosphorus source.

3. (Previously Presented) The method as described in claim 1, wherein said transparent decoupling layer is applied at a temperature below 780°C, preferably below 750°C.

4. (Previously Presented) The method as described in claim 1, wherein said transparent decoupling layer is applied at a temperature of about 700°C.

5. (Previously Presented) The method as described in claim 1, wherein said transparent decoupling layer is applied with the use of trimethyl gallium as a gallium source.

6. (Previously Presented) The method as described in claim 1, wherein said transparent decoupling layer is grown by organometallic vapor-phase epitaxy (OMVPE).

7. (Previously Presented) The method as described in claim 2, wherein said decoupling layer comprises $Ga_x(In_yAl_{1-y})_{1-x}P$ wherein
$0.8 \leq x$ and $0 \leq y \leq 1$, particularly GaP.

8. (Previously Presented) The method as described in claim 6, wherein said transparent decoupling layer is grown with a V:III ratio of 5 to 20, preferably of about 10.

9. (Currently amended) A radiation-emitting semiconductor chip based on ~~AlGaInPm~~ AlGaInP comprising:

a substrate;

a semiconductor layer sequence applied to said substrate and comprising a photon-emitting active layer; and

a transparent decoupling layer disposed on said semiconductor layer sequence, wherein said substrate is formed of germanium.

10. (Previously Presented) The radiation-emitting semiconductor chip as described in claim 9, wherein said transparent decoupling layer comprises $Ga_x(In_yAl_{1-y})_{1-x}P$ wherein $0.8 \leq x$ and $0 \leq y \leq 1$, particularly GaP.

11. (Previously Presented) The radiation-emitting semiconductor chip as described in claim 9, wherein said transparent decoupling layer has a thickness of between about 1 μm and about 10 μm, particularly of between about 2 μm and about 10 μm.